

REMARKS

In the office action, the examiner finds five different inventions within the subject matter of the claims, and requires election of one invention. This identification of “species” is based on different drawings in the application: Figs. 2-6. The applicants respond by amending the claims to clearly create a claim generic to the embodiments depicted in at least Figs. 2, 3, 5 and 8, and then electing the invention of that claim.

The applicants respectfully believe that this complies with the requirements of 37 CFR 1.141-1.142 that the applicants must “elect an invention to which the claims will be restricted” when the examiner decides that “two or more independent and distinct inventions” are “claimed in one national application.” Examination of the claim amendments made herein will confirm that certain inventions are being restricted out by this election, subject to the applicants’ right to pursue any of them in divisional applications.

Attention is directed to subpart 2 of the application, entitled “suppressing surface noise generation: optimizing surface electric fields.” This part of the specification contains paragraphs 21-35, and related drawings include Figs. 2, 3, 5 and 8. The common essence of the embodiments in this grouping No. 2 is that constant potential conductors are arrayed about the receiver area and this tends to minimize electromagnetic fields in that surrounded area (thus minimizing noise from near-surface conversions of electromagnetic to seismic energy). The underlying principle of physics is a well known consequence of the equally well known Gauss’s Law: the electric field must be zero inside a region enclosed by a surface of constant potential, for example a sphere made of a conducting material (sometimes called a “Faraday cage”). When a region is not completely surrounded by an equipotential surface, then the effect is not perfect but can still be substantial. The disclosed embodiments that make a practical application of this abstract idea constitute the elected invention.

The generic claim is created by amending claim 1 as shown in the attached listing of claims. The changes to part (b) are supported at, for example, the first sentence of paragraph 22 and the second sentence of paragraph 24. Both passages make more specific the original wording of “in the vicinity of,” showing the intent is

to tend toward surrounding the area where receivers will be located. The change making it explicit that the created area of low surface noise is for locating the receivers is supported by the third sentence of paragraph 21. The change to “at least one item of conducting material” is a broadening that is supported by several places in the application: (1) the third sentence of paragraph 22: “The electrodes **22** are horizontal buried wires or other conductors.” (Emphasis added) (2) The wire polygon **51** in Fig. 5 demonstrates achievement of a Faraday cage effect with a single conductor; (3) The disclosure of paragraph 35 shows that the “conducting component or components” need not be electrodes or connected to the signal source generator at all to produce the desired Faraday cage effect. The addition of the phrase “electrically connected to each other” is supported by the fact that all embodiments shown for the elected invention produce the Faraday cage effect either using one or more electrodes of the same polarity (meaning they are necessarily electrically connected) or by connected non-electrode conductor(s) – see the second sentence of paragraph 35.

Suitable dependent claims may be found in the claim amendment section of this response, including original claims 8-18, as amended herein. Claims reading upon the elected invention are claims 1, 8-18, 25 and new claim 26.

If there are multiple inventions claimed in the original claim set, the applicants respectfully believe they correspond to the parts 1-4 into which the description of the invention is divided, or possibly to parts (a) to (e) of original claim 1, but not to Figs. 2-6 which are intended merely as examples, with multiple examples provided for a single inventive concept in one case as mentioned above. The election and corresponding claim amendments made herein have addressed what the applicants respectfully believe is the reasonable lack of unity argument.

However, in the event that the examiner insists that 37 CFR 1.141-142 must be construed to require the applicant to elect from any species menu that the examiner may serve up, which interpretation the applicants do not agree with, the applicants’ alternative election under that interpretation is the embodiment of Fig. 2, and the claims that read on that embodiment are claims 1, 8, 9, 14 and 18. Yet how can it be said whether or not claims 14 and 18 should be included in that list? Figures 2-6 illustrate only relative electrode layout and polarity. There are other features of

certain embodiments of the invention, such as depth of formation of interest and voltage adjustment between multiple near electrodes, which the drawings are not intended to illustrate. Thus, the effect of an incorrect identification of invention “species” is compounded into an impossible task of identifying corresponding claims. This, as well as other arguments made herein protesting the restriction requirement as specifically limited to the five species identified by the examiner, is believed to be sufficient to preserve the right to petition. It is hoped that the examiner understands that all of the remarks provided herein are intended to be cooperative and helpful in leading toward an acceptable resolution of the restriction issue.